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**EXPLANATION OF SIGNIFICANT DIFFERENCES  
TO THE RECORD OF DECISION  
FOR OPERABLE UNITS 1, 2, 3, 4 AND 5  
AT NAVAL AIR STATION WHIDBEY ISLAND**



**December 2007**

**Prepared by:**



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## I. Introduction

This document presents an Explanation of Significant Differences (ESD) to the Records of Decision (RODs) for Operable Units (OUs) 1 through 5 on Naval Air Station (NAS) Whidbey Island. The U.S. Navy and the U.S. Environmental Protection Agency (EPA) signed the RODs with the concurrence of the Washington State Department of Ecology (Ecology). The five RODs specifically addressed by this ESD are:

- Operable Unit 1 (OU1), Ault Field, 20 December 1993, EPA/ROD/R10-94/075
- Operable Unit 2 (OU2), Ault Field, 2 June 1994, EPA/ROD/R10-94/077
- Operable Unit 3 (OU3), Ault Field, 29 March 1995, EPA/ROD/R10-95/113
- Operable Unit 4 (OU4), Seaplane Base, 20 December 1993, EPA/ROD/R10-94/074
- Operable Unit 5 (OU5), Ault Field, 10 July 1996, EPA/ROD/R10-96/142

This ESD was prepared per Section 117(c) of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 40 CFR 300.435(c) (2), and an October 2003 interim guidance document titled, *Navy Principles and Procedures for Specifying, Monitoring and Enforcement of Land Use Controls and Other Post-ROD Actions*.

It documents the current status of the selected remedies in the RODs, identifies or clarifies the land use control (LUC) requirements for individual areas within the RODs, and documents the procedures the NAS Whidbey Island will undertake to ensure effective implementation of LUCs for the individual areas. This ESD will become part of the administrative record for the Ault Field and Seaplane Base facilities. The administrative record is located at the Naval Facilities Engineering Command Northwest, 1101 Tautog Circle, Silverdale, WA, 98315-1101. This ESD will also be available at the Environmental Affairs Department, Naval Air Station Whidbey Island, 1155 W. Lexington Street, Oak Harbor, WA 98278.

## II. Summary of Area History, Contamination Problems, and Selected Remedy

NAS Whidbey Island is located on Whidbey Island in Island County, Washington, at the northern end of Puget Sound and the eastern end of the Strait of Juan de Fuca. Whidbey Island is a north-south oriented island that is approximately 40 miles in length and ranges from one to ten miles in width.

NAS Whidbey Island is a Department of the Navy facility encompassing approximately 8,000 acres. The base is separated into two areas, operating approximately five miles apart, Ault Field and Seaplane Base. NAS Whidbey Island is bordered primarily by residential and agricultural land uses and is located near the City of Oak Harbor, a city with a population of approximately 21,000.

NAS Whidbey Island was commissioned in September 1942 and has since provided services and materials in support of the Navy's aircraft and aviation activities. Since the 1940s, operations at

NAS Whidbey Island generated a variety of industrial wastes that was disposed on the area using disposal practices considered acceptable at the time.

In 1984 the Navy conducted an Initial Assessment Study at NAS Whidbey Island under the Navy Assessment and Control of Installation Pollutants (NACIP) program for identifying disposal practices and locations where industrial contaminants may have been released to the environment (SCS Engineers, 1984). A more focused follow-up investigation and report, the NAS Whidbey Island Current Situation Report, was completed in January 1988 (SCS Engineers, 1988). After the 1988 Current Situation Report was completed, more intensive investigations were proposed for areas where contamination was verified or where unverified conditions indicated further investigations were appropriate.

In late 1985, EPA proposed Ault Field and Seaplane Base for listing on the National Priorities List (NPL). Both facilities were listed on the NPL in February 1990.

In October 1990, the Navy, EPA, and Ecology entered into a Federal Facilities Agreement (FFA). The FFA established a procedural framework and schedule for developing, implementing, and monitoring response actions at NAS Whidbey Island. In 1991, a Remedial Investigation/Feasibility Study (RI/FS) identified contaminants with concentrations exceeding maximum contaminant levels (MCLs) at numerous areas. Following CERCLA and Superfund Amendments and Reauthorization Act (SARA) guidelines, various areas at NAS Whidbey Island were grouped into OUs. Ault Field is divided into four operable units – OU1, OU2, OU3, and OU5. [See Figure 1] The Seaplane Base is a separately listed facility and constitutes OU4. Seaplane Base has since been deleted from the NPL.

### **Operable Unit 1**

OU1 consists of Areas 5 and 6 at Ault Field. Properties adjacent to OU1 use groundwater for residential and agricultural purposes. There are approximately 25 private wells within a half-mile of OU1.

**Area 5** is approximately 500 feet long by 500 feet wide and was used for gravel excavation. This area is located north of Ault Field Road and west of State Highway 20. Area 5 is currently a flat open area covered by a mixture of soil, gravel, and vegetation. Waste was limited to surface disposal of non-residential material (construction debris, scrap metals, etc.). Approximately 600 feet west of Area 5 is a small freshwater wetland that historically received surface water runoff from the excavation via a small gully extending west from the northwest edge of the excavation. Because of runoff from the excavation to the western wetland, the investigation for Area 5 was extended to include surface water and sediments in the vicinity of the wetland. This enabled the investigation to determine whether the suspected wastes disposed of within the excavated area released contaminants to the wetlands.

**Area 6** is a 260-acre tract in the southeast corner of Ault Field. Within Area 6, there are two areas where wastes are known to have been disposed. Industrial waste disposal began in 1969 and ended in the early 1980s. Disposed waste consisted of solvents, oily sludge, thinners, and other hazardous compounds. The industrial waste disposal area was filled and is now covered

with natural vegetation. A separate portion of Area 6 received Navy household municipal waste from 1969 to 1992. The municipal waste landfill operation covers approximately 40 acres and is now covered with a synthetic cap, soil, and natural vegetation.

Ault Field Road, a public road, borders Area 6 to the north, State Highway 20 borders to the east, and the Oak Harbor Landfill borders on the south and southwest. The land located immediately west of Area 6 is privately owned, undeveloped forest or recently logged property, and a sand and gravel quarrying operation. The Ault Holland Inn and a mobile home park are located to the immediate south of the landfill property. Private residences are located to the east, west and south of the Area 6 landfill. A groundwater divide, located approximately under Ault Field Road, diverts the groundwater south through Area 6 or north through Area 5. Area 6 surface water drains under Ault Field Road into the runway ditch drainage complex north of Ault Field Road and into Dugualla Bay.

The remedial action objectives (RAOs) and the major components of the remedies selected in this ROD are summarized in attachment (A-1).

## **Operable Unit 2**

OU2 at Ault Field consists of the following five areas:

- Area 2 – Western Highlands Landfill
- Area 3 – 1969 to 1970 landfill
- Area 4 – Walker Barn Storage Area
- Area 14 – former pesticide rinsate disposal area
- Area 29 – former Clover Valley Fire School

**Area 2** was a 13-acre former landfill located southwest of the current fire-training school. From 1959 to 1969, the landfill was the principal disposal area for solid wastes from NAS Whidbey Island. The landfill received industrial wastes, construction and demolition debris. The area is covered with soil and vegetation. The western boundary of Area 2 slopes toward the Strait of Juan de Fuca. A gravel road and fence define the southern boundary. A wetland is located near the eastern boundary. No remediation was conducted, but the groundwater in the area is monitored for metals.

**Area 3** is a 1.5-acre parcel located east of Area 2 and southeast of the current fire-training school. Area 3 was used for disposal of solid waste between 1969 and 1970. The materials disposed at Area 3 are similar to Area 2. The landfill is covered with soil and is vegetated. Areas 2 and 3 were considered together because of their similar nature and close proximity to each other. No remediation was conducted, but the groundwater in the area is monitored for metals.



**Area 4** is located approximately 400 yards west of Saratoga Street in the southwest-central part of Ault Field. Area 4 was known as the Walker Barn Storage Area and used to store electrical supplies, transformers, and telephone poles. The current fire training school is located to the southwest and Naval Hospital Oak Harbor is approximately 300 yards to the north. A gravel parking lot is located adjacent to the area south of Area 4. Area 4 is flat, partially covered with native grasses, approximately 240 feet wide, and 400 feet long. NAS Whidbey Island has removed approximately 1,750 cubic yards of polychlorinated biphenyl (PCB)-contaminated soil from Area 4.

**Area 14** consists of an approximately 0.5-acre fenced parcel located immediately south of Building 2555 and west of Langley Boulevard. Area 14 was known as the pesticide rinsate disposal area. It was used for pesticide storage, mixing, and washing and rinsing of pesticide equipment and vehicles. Pasturelands are adjacent to the southern and western boundaries of Area 14. A drywell was installed on the north-central edge of the area in 1973. The drywell is located near an intermittent creek that originates from a spring in the northwestern corner of the area and flows southeastward through Area 14, toward Langley Boulevard. NAS Whidbey Island has removed approximately 1,000 gallons of pesticide rinsate and 420 cubic yards of dioxin-contaminated soil from Area 14.

**Area 29** consists of a 4-acre parcel located west of the intersection of Clover Valley Road and Golf Course Road in the southwestern portion of Ault Field. Area 29 was known as the Clover Valley Fire School and was used for fire training. The area is bordered by evergreen trees to the west; the Gallery Golf Course to the south; Clover Valley Road to the north; and Golf Course Road to the east. A 1,600-square foot concrete pad is located in the center of the area. A small ditch extends northeastward from the concrete pad to a ditch along Clover Valley Road. This ditch eventually flows into the wetland between Areas 2 and 3. NAS Whidbey Island has removed approximately 1,400 cubic yards of polynuclear aromatic hydrocarbons (PAHs) contaminated soil from Area 29.

The RAOs and the major components of the remedies selected in this ROD are summarized in attachment (A-2).

### **Operable Unit 3**

OU3 consists of:

- Area 16 - the runway ditches
- Area 31 - the former fire training school

An RI/FS for OU3 was initiated in 1992 and completed in April 1994. However, because of the need for further evaluation, Area 31 was administratively transferred to the ROD for OU5 and is addressed as part of OU5.

**Area 16** comprises the eastern portion of Ault Field, including the flight line area and the drainage areas through Clover Valley. The ditches consist of approximately nine miles of

connected ditches and one mile of culverts that drains the runway area and receives drainage from many of the station's storm drains. The majority of the ditches eventually connects with the Clover Valley stream and drain east to Dugualla Bay. One ditch, located north of Runway 7-25, drains west into the Strait of Juan de Fuca and receives runoff from the runway.

Environmental media sampled during the OU3 investigation included surface and subsurface soil, groundwater, ditch sediments, lagoon sediments, marine sediments, ditch surface water, lagoon surface water, marine surface water, and marine shellfish tissue. Contamination of concern at Area 16 consisted of runway ditch sediments with contaminants that included semi-volatile organic compounds (SVOCs), PAHs, volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), metals including arsenic and lead, pesticides, herbicides, and PCBs. These contaminants of concern were identified as posing an ecological risk to the environment, including animals such as muskrats and benthic organisms.

The selected remedy for the runway ditches consisted of removal of contaminated sediments with disposal of sediments in the Area 6 landfill. All the contaminated sediment was disposed of off-site as part of the remedial action. Future land use is limited to commercial and/or industrial use only.

The RAOs and the major components of the remedies selected in this ROD are summarized in attachment (A-3).

#### **Operable Unit 4**

OU4 at Seaplane Base consists of the following five areas:

- Area 39 – former auto repair and paint shop
- Area 41 - Building 25 and 26 disposal area
- Area 44 – former Seaplane Base Nose Hangar
- Area 48 – former Seaplane Base Salvage Yard
- Area 49 – former Seaplane Base Landfill

**Area 39** was the location of a former auto repair and paint shop that was housed in Building 49, located north of West Coral Sea Avenue. From 1961 to 1965, an estimated 1,000 to 2,000 gallons of caustic radiator solvents were spilled on the ground northeast of Building 49. An estimated 2,000 gallons of radiator test tank water containing traces of sealant, antifreeze, soldering compounds, and acid were reportedly poured onto the ground south of Building 49 during the same period. From 1956 until 1982, wastewater from an 800-gallon paint booth was reportedly discharged up to once a week to the drainage ditch north of Building 49.

**Area 41** is located just west of Area 39 and includes the concrete foundation of Building 25 (demolished), Building 26, and the rock seawall located immediately west of the buildings.



These buildings were used as paint shops in the 1940s and 1950s and later housed the pest control shop in the 1960s. Personnel reportedly discharged waste paint, thinners, solvents, and pesticides onto the seawall.

**Area 48** was a salvage yard for the Seaplane Base and was used from the 1940s until the late 1960s or early 1970s. The salvage yard was located southeast of the intersection of Torpedo Road and East Pioneer Way. In the mid-1960s there was a fire of flammable materials stored there, which reportedly resulted in unknown quantities of solvents, thinners, strippers, and paints being spilled onto the ground and marsh.

The selected remedy for Areas 39, 41, and 48 included excavation of contaminated soils, on-station disposal at the Area 6 landfill and placement of a multi-layer cap. The contaminants of concern for these areas included lead, arsenic, chromium, pesticides, and PAHs. The estimated volumes of contaminated soil that were removed and disposed are: Area 39 - 256 cubic yards of surface soil; Area 41 - 5 cubic yards of shallow soil; and Area 48 - 1,000 cubic yards of surface soil.

**Area 44** was the Seaplane Base Nose Hangar that was located at the northern end of a large paved apron east of Catalina Drive. In the 1940s and 1950s, the Nose Hangar was used as a service and maintenance center for seaplanes. Operations included steam cleaning and washing, fueling, lubricating, and parts cleaning. Numerous 1 to 100-gallon aviation fuel spills were reported that might have drained into Oak Harbor Bay through the Area 44 storm drain system. The Nose Hangar was demolished with only the foundation and concrete apron remaining.

The selected remedial action for Area 44 included excavation, treatment, and off-area disposal at an approved landfill of approximately 1 cubic yard of sediment and approximately 30 cubic yards of surface soil. Contaminants of concern for Area 44 included arsenic and lead that were detected above cleanup levels.

The remedial actions for Areas 39, 41, 48, and 44 do not require LUCs since the remedy is removal of contamination to cleanup levels that allow unrestricted use and exposure.

**Area 49** was a 3 to 4-acre landfill that was located farther east along Crescent Harbor. The landfill was used between 1945 and 1955 and reportedly all of the solid waste from Seaplane Base operations was disposed at Area 49 during that period. Seaplane repair and maintenance operations may have disposed of solvents, degreasers, paints, thinners, and strippers. No visible evidence can be found. Areas 48 and 49 were investigated and evaluated together in the RI/FS. Both areas are located to the east of the main Seaplane Base next to Crescent Harbor. Both areas are covered with native grasses and occasionally used for recreational purposes.

Inorganic and organic constituents were detected in groundwater at Area 49; however, groundwater in that area is not suitable for potable sources due to saltwater intrusion. No chemicals were detected above the Washington State Model Toxics Control Act (MTCA) cleanup levels.

The RAOs and the major components of the remedies selected in this ROD are summarized in attachment (A-4).

### **Operable Unit 5**

OU5 consists of the following three areas:

- Area 1 - beach landfill
- Area 52 - Jet Engine Test Cell
- Area 31 - former runway fire school.

**Area 1** was a 6-acre landfill that was used for disposal of demolition and construction debris from the construction of the base between 1940 and 1970. Area 1 is located west of the intersection of Saratoga and Princeton Streets, between the Nor'wester Club and the Jet Engine Test Cell. Some of the waste disposed from 1945 to 1958 was burned at the landfill. Timbers, refuse, metal, and concrete are present in the exposed shoreline bluff.

The remedial action for Area 1 addressed potential ecological risks through sampling in the intertidal zone and groundwater monitoring, along with biological surveys of the beach. Sampling and inspection surveys are conducted to evaluate and determine if ecological risks exist and if further actions are needed to protect marine life. The remedy also includes LUCs.

**Area 52** is an active facility where jet engines are tested. The area is located southwest of the intersection of Saratoga Street and Enterprise Road. Two 10,000-gallon underground jet fuel storage tanks with aboveground ancillary equipment are located east of Saratoga Street. An underground fuel supply line runs from these tanks to the test facilities. Releases associated with Area 52 include jet fuel, waste oil, and solvents.

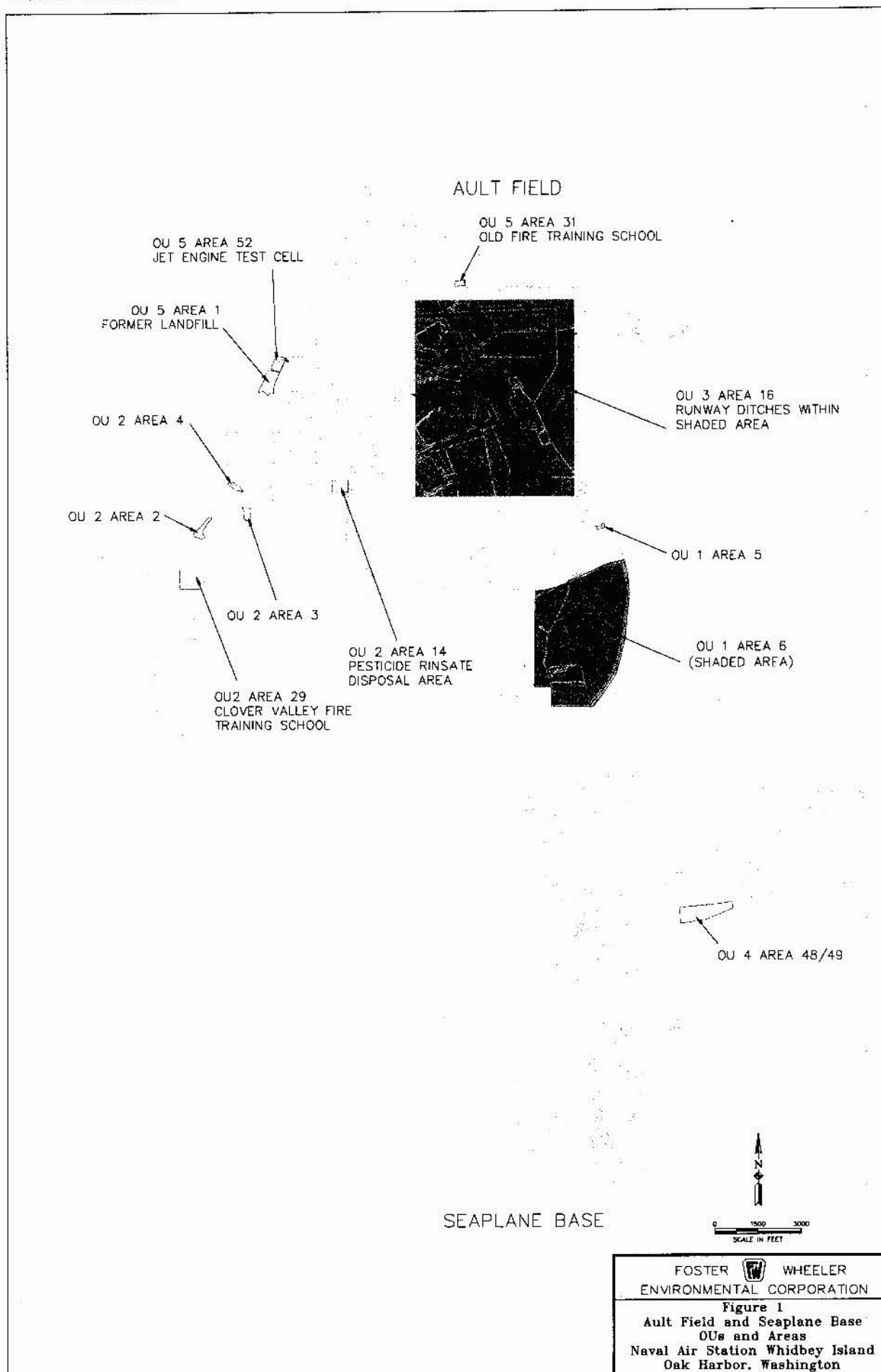
The selected remedy for Area 52 addressed potential ecological risks posed by petroleum products that lie on top of the groundwater. The objective at Area 52 is to prevent the petroleum from discharging to marine water. The remedial action for Area 52 does not include remediation of the groundwater to drinking water standards since the aquifer is not considered to be a drinking water source. The petroleum discharges to marine water are prevented by skimming the petroleum from the groundwater and recycling the recovered petroleum at an approved off-site facility. The effectiveness of the petroleum recovery activities is evaluated through groundwater monitoring. The remedy for Area 52 relies on natural attenuation to achieve groundwater cleanup standards over the long term. The remedy also includes LUCs.

**Area 31** is geographically located within OU2, but is administered as part of OU5. Area 31 was used for firefighting training from 1967 through 1982. The area is located approximately 400 yards northeast of the intersection of Runways 14-32 and 7-25. Waste fuels such as aviation gasoline (avgas) and jet petroleum #5 (JP-5), waste oil, solvents, thinners, and other flammable materials were ignited and extinguished in a shallow concrete burn pad. The entire drill area consists of 1 to 2 acres, sloping gently to the southwest. The burn pad, roughly 50 by 50 feet,

consists of a retaining berm around its perimeter and a floor that sloped toward a drain in the center. Oily water from the burn pad was drained through an oil/water separator to a small wetland in the southwest corner of the drill area approximately 200 feet from the burn pad. Recovered oil was stored in an underground tank on site. Several small ash piles of fused metal and dirt surrounded the area perimeter.

The selected remedy for Area 31 addressed exceedances of drinking water standards and potential future human health risks posed by chemicals detected in the groundwater. The remedial action included oil skimming for groundwater and bioventing of soil, removal of the oil/water separator and tank, removal of the ash pile and limited soil, and sediment removal. Groundwater monitoring is conducted to monitor effectiveness of the remedial activities. The remedy for Area 31 relies on natural attenuation to achieve groundwater cleanup standards over the long term. The remedy also included LUCs.

The RAOs and the major components of the remedies selected in this ROD are summarized in attachment (A-5).



### III. Description of the Significant Difference and the Basis for those Differences

At sites where contaminants are left in place, LUCs and institutional controls (ICs) are used to ensure that contaminants do not pose an unacceptable risk to human health or the environment. LUCs are any restrictions or administrative actions, including engineered controls (i.e. fencing, signage, capping) or ICs, arising from the need to limit exposure to contaminated media and/or areas to reduce risk to human health and the environment. ICs are non-engineered instruments, such as administrative and/or legal controls, helping to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land and/or resource use. Examples of ICs include easements and covenants, zoning restrictions, special building permit requirements, and well drilling prohibitions.

At the time the NAS Whidbey Island RODs were executed, IC and LUC requirements included in those RODs were vague and lacked both detailed objectives and specific information. More specificity is needed to ensure that LUCs/ICs will be implemented, monitored, maintained, and enforced. Since this information is lacking in the existing NAS Whidbey Island RODs, the purpose of this ESD is to provide more specificity regarding LUCs and ICs and to document how the Navy will support the continuation of LUCs/ICs if the property is ever transferred from Navy custody. This ESD meets the intent of the "*Principles and Procedures for Specifying, Monitoring and Enforcing Land Use Controls and Other Post-ROD Actions*" which was issued by the Navy in October 2003. Consistent with this ESD and policy, NAS Whidbey Island shall develop a comprehensive approach for establishing, implementing, enforcing, and monitoring LUCs at the facility. This approach shall be incorporated into a LUC implementation plan and submitted to EPA for review and approval no later than nine months after the effective date of this ESD.

This LUC implementation plan shall:

1. Include a comprehensive, facility-wide list of all areas or locations covered by any and all decision documents that have or should have LUCs/ICs for protection of human health or the environment. The information on this list shall include, at a minimum, the location of the area; the objectives of the restriction or control; the time frame that the restrictions apply; the tools and procedures the facility shall use to implement the restrictions or controls; and to evaluate the effectiveness of these restrictions or controls.
2. Cover and legally bind where appropriate, all entities and persons including but not limited to, employees, contractors, lessees, agents, licensees, residents of the base, and invitees. In areas where the facility is aware of routine trespassing, trespassers must also be covered.
3. Cover all activities and reasonably anticipated future activities including but not limited to, any future soil disturbance; routine and non-routine utility work; well placement and drilling; human exposure; ecological concerns; groundwater withdrawals; paving; troop training activities; construction; renovation work on structures, or other activities.
4. Include a tracking mechanism that identifies all land areas under restriction or control.

5. Include a process to monitor and report on the LUCs, including addressing any activity that is inconsistent with the LUC/IC objectives or use restrictions, or any other action that may interfere with the effectiveness of the LUC/ICs.

6. Include notification to EPA and Ecology of NAS Whidbey Island's intention to change any internal procedures that will affect LUC/ICs.

### **III. A. Summary of Objectives and Remedies**

Attachment (A) provides a summary of the RAOs and selected remedial actions for each ROD at NAS Whidbey Island.

### **III. B. Site-Specific LUC Requirements**

Attachment (B) contains the current, revised, area-specific LUC/IC requirements for each OU and area listed in attachment (A) that requires land use controls. These revised requirements define the geographic location where each LUC/IC is required, the objective of the control or restriction and a description of the types of restrictions that need to be in place.

Within 12 months of signature of this ESD, the NAS Whidbey Island facility shall submit to EPA and Ecology a monitoring report on the status of their LUCs/ICs. The facility shall then submit an updated LUC monitoring report to EPA and Ecology at least annually thereafter. After the facility's comprehensive facility-wide approach is established and the facility has demonstrated its effectiveness, the frequency of future monitoring reports may be modified subject to approval by EPA and Ecology. The LUC/IC monitoring report, at a minimum, shall contain:

- A description of how the facility is meeting the facility-wide LUC/IC requirements.
- A description of how the facility is meeting the OU-specific objectives, including results of visual field inspections of all areas subject to OU-specific restrictions.
- An evaluation of whether or not all the OU-specific and facility-wide LUC/IC requirements are being met.
- A description of any deficiencies and what efforts or measures have been or shall be taken to correct problems.

NAS Whidbey Island shall notify EPA and Ecology immediately (but no later than 10 days after) of discovery of any activity that is inconsistent with the OU-specific LUC/IC objectives, use restrictions, or any activity that may interfere with the effectiveness of the LUC/ICs for the areas described in attachment (B). NAS Whidbey Island shall work together with EPA and Ecology to determine a plan of action to rectify the situation. The facility shall also identify what went wrong with the LUC/IC process, evaluate how to correct the process to avoid future problems



and implement these changes after consulting with EPA and Ecology. NAS Whidbey Island will notify EPA and the state regarding how the facility addressed or will address the activity within 10 days of sending EPA and the state notification of the activity.

NAS Whidbey Island shall identify a point of contact for implementing, maintaining, monitoring, and enforcing LUCs. NAS Whidbey Island shall use its best efforts to request and obtain funding to institute and maintain LUCs.

NAS Whidbey Island shall notify EPA and Ecology at least six months prior to any transfer, sale, or lease of any property subject to LUCs/ICs required by a decision document so that EPA and Ecology can be involved in discussions to ensure that appropriate provisions are included in the conveyance documents to maintain effective LUCs/ICs. If it is not possible for the facility to notify EPA and Ecology at least six months prior to any transfer, sale, or lease, then the facility shall notify EPA and Ecology as soon as possible (but no later than 60 days) prior to the transfer, sale, or lease of any property subject to LUCs/ICs. The Navy further agrees to provide EPA and the state with similar notice, within the same timeframes, as to federal-to-federal transfer of property. The Navy shall provide a copy of executed deeds or transfer documents to EPA and the state.

Together, these requirements and those described in attachment (B) should result in remedial actions that improve the short-term and long-term protectiveness to human health and the environment at NAS Whidbey Island. The applicable, or relevant and appropriate requirements (ARARs) established in the RODs are not modified by this ESD.

#### **IV. Duration of Land Use Controls**

The Navy, represented by the NAS Whidbey Island Commanding Officer, is responsible for implementing, monitoring, maintaining, reporting on, and enforcing these LUCs/ICs until and unless EPA and Ecology determine that the concentrations of hazardous substances in the soil, sediment and groundwater are at such levels to allow for unrestricted use and exposure. NAS Whidbey Island shall not modify or terminate LUC/IC, implementation actions or modify land use without approval by EPA and Ecology.

NAS Whidbey Island shall seek prior concurrence before any anticipated action that may disrupt the effectiveness of the LUCs/ICs or any action that may alter or negate the need for LUCs/ICs.

#### **V. State Agency Comments**

The Washington State Department of Ecology has reviewed this ESD and supports these changes to the land use controls.

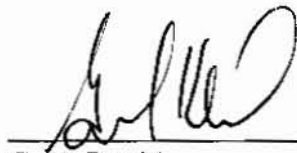
#### **VI. Public Participation Activities**

The NAS Whidbey Island will publish a notice of availability and a brief description of this ESD in the local newspaper, the Whidbey News Times, per NCP Section 300.435 (c) 2(i). The need

for this ESD has also been discussed with the NAS Whidbey Island Restoration Advisory Board (RAB).

## VII. Affirmation of the Statutory Determinations

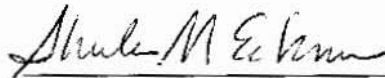
The ARARs addressed by the previous NAS Whidbey Island RODs are not modified by this ESD. This ESD identifies LUCs required for specific areas in operable units that were not previously included in the RODs for those areas. Considering the clarifications to the selected remedies as documented in this ESD, the Navy and EPA believe that the LUCs portion of the remedies for all areas are protective of human health and the environment, comply with federal and state requirements that are identified in the RODs as ARARs, are cost-effective and satisfy CERCLA §121.



G. K. David  
Captain, USN  
Commanding Officer, Naval Air Station Whidbey Island

27 DEC 2007

Date



Daniel D. Opalski  
Director, Environmental Cleanup Office  
EPA, Region 10

12/28/07

Date

Acting

## **Attachment A-1**

### **A Summary of the RAOs and Selected Remedial Actions from the ROD for OU1 at the Naval Air Station Whidbey Island, Ault Field**

**OU1 ROD, December 20, 1993**

#### **Area 6**

- **RAOs:**

- Reduce the risk associated with the continued spread of the contaminated groundwater
- Restore contaminated groundwater in the shallow aquifer to levels that are safe for drinking
- Minimize movement of contaminants from the fill material in the landfill to the groundwater
- Prevent direct exposure to contaminated subsurface soil and debris
- Prevent further movement of contaminated groundwater across the area boundary and to prevent consumption by area residents of groundwater exceeding MCLs

- **Selected Remedy:**

- Source Controls
  - Extract groundwater from the shallow aquifer beneath the western boundary of the Area 6 landfill and treat by air stripping
  - Return the treated water to the shallow aquifer at an on-site location
  - Cap the landfill
- Groundwater Controls
  - Monitor groundwater in the shallow, intermediate and deep aquifers
  - Monitor off-area water supply wells in the vicinity

- LUCs
  - Restrict access or contact
  - Prevent installation of on-area drinking water wells by deed restrictions in future property deeds

#### **Area 5**

- RAOs:
  - Sampling and monitoring to determine whether metals levels are consistent with background or elevated above levels of concern for human health
- Selected Remedy:
  - Groundwater Controls
    - Monitor groundwater in the shallow aquifer for metals
  - LUCs
    - Prevent installation of on-site drinking water wells
    - Deed restrictions in future property deeds

## **Attachment A-2**

### **A Summary of the RAOs and Selected Remedial Actions from the ROD for OU2 at the Naval Air Station Whidbey Island, Ault Field**

#### **OU2 ROD, May 17, 1994**

##### **Areas 2 and 3**

- RAOs:
  - Reduce risk to hypothetical future residents from groundwater contaminants at Areas 2 and 3
- Selected Remedy:
  - Groundwater Controls
    - Six-month monitoring program for metals and volatile organic compounds (VOCs)
  - LUCs
    - Possible deed restrictions in future property deeds
    - Possible groundwater use restrictions if monitoring results warrant

##### **Area 4**

- RAOs:
  - Reduce the health risk to future residents and the environmental risk to small mammals by remediation surface and near-surface soil (containing PCB, PCP, and MCPP) to meet state and federal standards
  - Reduce risk to hypothetical future residents from inorganic groundwater contaminants by implementing residential use deed restrictions and, if necessary, implementing groundwater use restrictions
  - Minimize the potential for migration of contaminants from surficial soils to surface water or other media

- Selected Remedy:

- Removal of contaminated surface soil and backfill with clean soil; off-site disposal of excavated soil to a Toxic Substances Control Act (TSCA)-approved disposal facility
- Groundwater Controls
  - Groundwater monitoring for inorganics
- LUCs
  - Possible groundwater use restrictions if groundwater monitoring warrants

**Area 14**

- RAOs:

- Reduce risks to hypothetical future residents by removing the sources of organic contamination (the drywell and surrounding soils)
- Minimize the potential for migration of contaminants from surface soils to surface water or other media

- Selected Remedy:

- Source Controls
  - Removal of approximately 420 cubic yards of dioxin-contaminated soil and backfill with clean soil
  - Off-site disposal of excavated soil at an approved disposal facility.
  - Pump out, treatment, and disposal of water from the drywell used for pesticide rinsate disposal and monitoring well 14-MW-1
  - Excavation of the drywell, monitoring well and approximately 420 cubic yards of surrounding contaminated soil
  - Disposal of the excavated soils and well casings at an appropriate facility
- Groundwater Controls
  - Reinstall monitoring well 14-MW-1



- Wet season groundwater monitoring
- LUCs
  - No ICs are required

**Area 29**

- RAOs:
  - Reduce risk to hypothetical future residents from inorganic groundwater contaminants by implementing residential use (future) deed restrictions and, if necessary, implementing groundwater use restrictions
  - Minimize the potential for migration of contaminants from surface soils to surface water or other media
  - Reduce future exposure to soil containing residual organic compounds to exceed state regulatory limits or present ecological risks
- Selected Remedy:
  - Source Controls
    - Excavation, removal, and disposal of approximately 1,400 cubic yards of PCP- and PAH-contaminated surface soil
    - On-site disposal of the excavated soil at Area 6 landfill (Ault Field)
    - Excavation area left open to create a wetland
  - Groundwater Controls
    - Groundwater monitoring for inorganics
  - LUCs
    - Possible LUCs, if groundwater monitoring warrants

### **Attachment A-3**

#### **A Summary of the RAOs and Selected Remedial Actions from the ROD for OU3 at the Naval Air Station Whidbey Island, Ault Field**

##### **OU3 ROD, April 14, 1995**

###### **Area 16**

- RAOs:
  - Reduce ecological risks posed by the contaminated sediments
  - Reduction of future human health risks that may occur if contaminated sediments are dredged for ditch maintenance purposes
- Selected Remedy:
  - Source Controls
    - Excavation and removal of contaminated sediment to eliminate ecological risks
    - Disposal of non-hazardous excavated contaminated sediments at the Area 6 landfill at Ault Field prior to implementation of the landfill cap
  - LUCs
    - Current land use will remain industrial
    - Deed restrictions for industrial use

## **Attachment A-4**

### **A Summary of the RAOs and Selected Remedial Actions from the ROD for OU4 at the Naval Air Station Whidbey Island, Seaplane Base**

#### **OU4 Seaplane Base ROD, December 20, 1993**

##### **Area 39**

- RAOs:
  - Groundwater RAOs not required
  - Minimize contamination of surface water
  - Minimize direct contact of humans and animals with contaminants of concern
  - Reduce concentrations of contaminants in the surface soil
- Selected Remedy:
  - Source Controls
    - Excavation of contaminated soils; on-site disposal (Area 6 landfill at Ault Field) of excavated soils
  - LUCs
    - Possible deed restrictions

##### **Area 41**

- RAOs:
  - Groundwater RAOs not required
  - Minimize contamination of surface water
  - Minimize direct contact of humans and animals with contaminants of concern
  - Reduce concentrations of contaminants in the surface soil

- Selected Remedy:

- Source Controls
  - Excavation of contaminated soils
  - On-site disposal (Area 6 landfill at Ault Field) of excavated soils
- LUCs
  - Possible deed restrictions

**Area 44**

- RAOs:

- Groundwater RAOs not required
- Reduce concentrations of contaminants in storm drain system sediments to comply with applicable federal and state regulations
- Prevent further migration of these contaminants
- Removal of contamination to prevent impact to human health and/or the environment

- Selected Remedy:

- Source Controls
  - Excavation of contaminated soils
  - Treatment of excavated soils, if necessary for disposal
  - Off-site disposal of excavated, contaminated soils

**Area 48**

- RAOs:

- Groundwater RAOs not required
- Minimize contamination of surface water
- Minimize direct contact of humans and animals with contaminants of concern

- Reduce concentrations of contaminants in the surface soil
- Selected Remedy:
  - Source Controls
    - Excavation of contaminated soils
    - On-site disposal (Area 6 landfill at Ault Field) of excavated soils

**Area 49**

- RAOs:
  - No RAOs are identified in the ROD

**Attachment A-5**

**A Summary of the RAOs and Selected Remedial Actions from the ROD for OU5 at the Naval Air Station Whidbey Island, Ault Field**

**OU5 ROD, July 10, 1996**

**Area 1**

- RAOs:
  - Confirm protection of ecological receptors in the marine environment by determining compliance with water quality standards for marine surface waters at the point of groundwater discharge
- Selected Remedy:
  - Groundwater Controls
    - Sample groundwater in inter-tidal zone
    - Monitor for state marine water quality standards
  - LUCs
    - Prevent installation of drinking water wells and residential development
    - Site approval for disturbance or use
    - Annual visual monitoring of the erosional bluff for five years

**Area 52**

- RAOs:
  - Prevent the migration of floating petroleum product from groundwater to marine surface water
  - Confirm protection of ecological receptors in the marine environment by determining compliance with water quality standards for marine surface waters at the point of groundwater discharge
- Selected Remedy:
  - Source Controls



- Petroleum recovery from the groundwater
- Excavation of drywell and backfilling with clean soil
- Groundwater Controls
  - Groundwater monitoring, including seep sampling
- LUCs
  - In the event of property transfer include (future) deed covenants to restrict land use and drinking water well construction
  - Land use restrictions to prevent installation of drinking water wells
  - Land use restrictions to prevent residential development

### Area 31

- RAOs:
  - Prevent human health exposure to lead in the ash
  - Reduce the sources of petroleum hydrocarbons in subsurface soils that may cause groundwater contamination
  - Prevent the migration of floating petroleum product and dissolved contaminants of concern that are present above ARARs in groundwater
  - Prevent human exposure under the future residential scenario to the contaminants of concern in the groundwater that are present at concentrations above state and federal cleanup levels
- Selected Remedy:
  - Source Controls
    - Remove oil/water separator
    - Remove ash pile
  - Groundwater Controls
    - Oil skimming and bioventing

- Groundwater monitoring and natural attenuation
- LUCs
  - Use restrictions to prevent installation of drinking water wells
  - Use restrictions to prevent residential development

## **Attachment B**

### **Site-Specific LUC Requirements**

#### **Forward**

The following contains the revised or proposed area-specific LUC/IC requirements for each OU and area listed in attachment (A) that requires LUCs. These revised requirements define the geographic location where each LUC/IC is required, the objective of the control or restriction and a description of the types of restrictions that need to be in place. NAS Whidbey Island shall develop a comprehensive approach for establishing, implementing, enforcing and monitoring LUCs/ICs at the facility. This LUC plan shall reference a NAS Whidbey Island instruction that establishes and implements the following LUCs/ICs and an approval process for any action that would affect a remedial objective identified by the RODs. NAS Whidbey Island will maintain the instruction, an Installation Restoration Site Database and will provide notice to EPA and Ecology of any change in NAS Whidbey Island's internal procedures. Site approval is required for all work that disturbs the earth or involves the placement or installation of any facility or infrastructure. The LUC plan shall incorporate LUC/ICs into a site review and approval procedure to implement the LUC/IC requirements for any action that may impact an area under LUC/ICs.

Additionally, as described in Section III of this ESD, the LUC plan shall outline the site-specific requirements in attachment (B). A copy of these LUCs/ICs will be maintained in the administrative record maintained by the Naval Facilities Engineering Command Northwest.

**Note:** The "areas" identified in attachment (B) include a surface buffer that is often larger than the "area" where contamination originated and take into account the uncertainties involved in defining soil contamination. They are intended to define an area in which soil disturbance LUCs apply. They are described herein by common landmarks but are defined elsewhere by a land grid coordinate system for permanent record. LUCs governing well installation and groundwater use may extend beyond these areas and engineering judgment shall be applied in the application of LUCs.

## **Attachment B-1**

### **Site-Specific LUC Requirements for OU1**

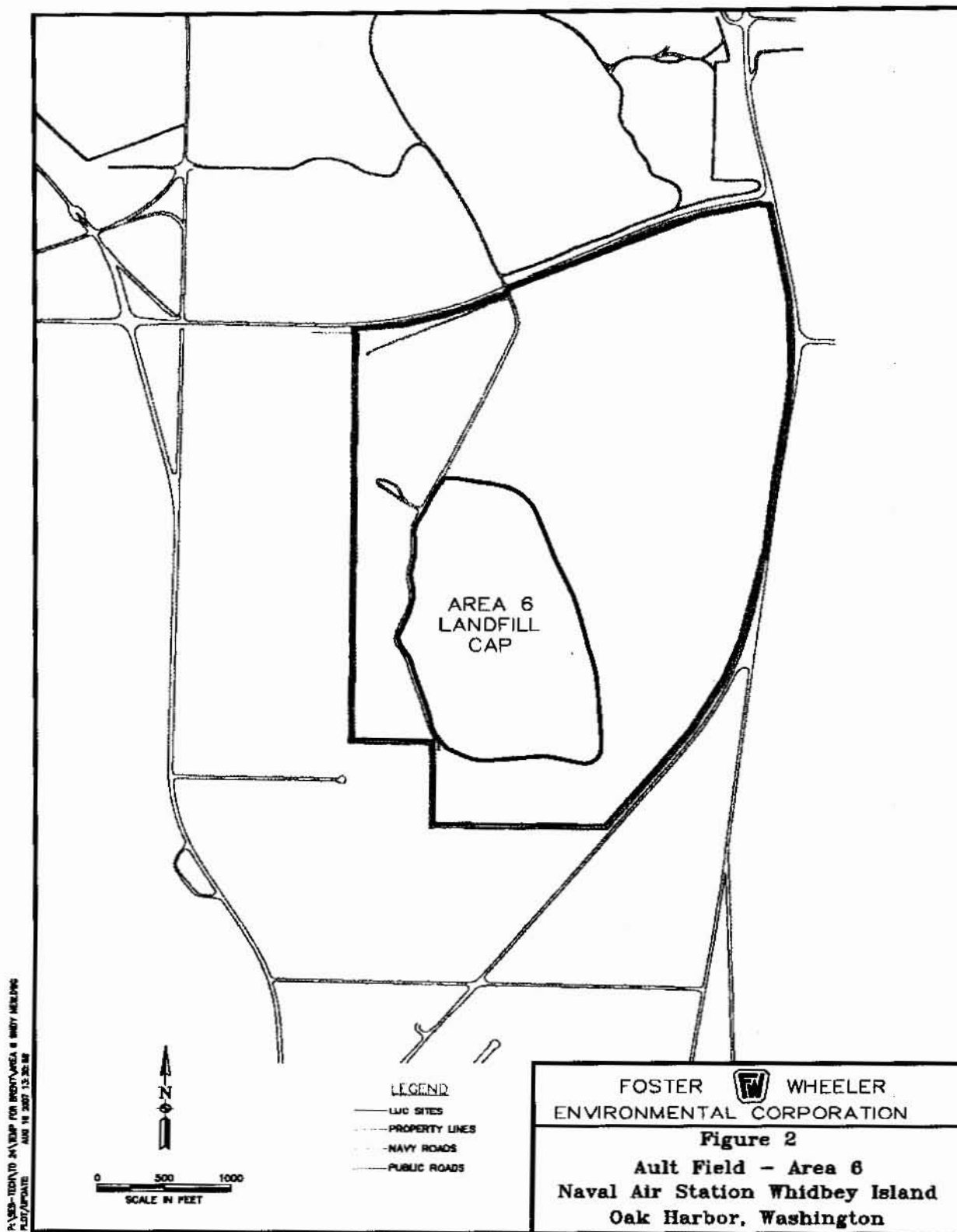
#### **OU1 ROD, December 20, 1993**

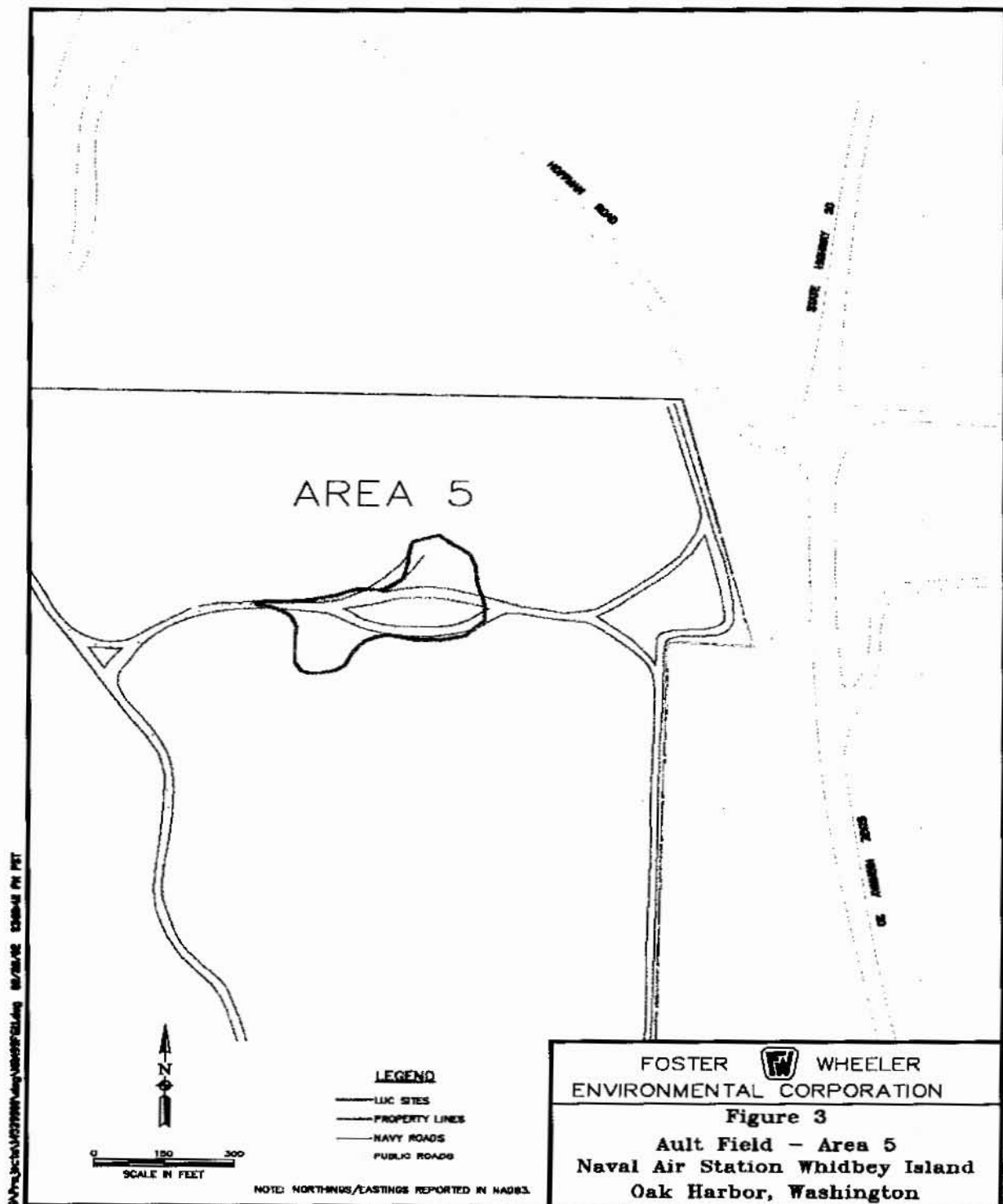
##### **Area 6**

- Area 6 includes the plumes of contaminated groundwater contamination above the MCLs originating from the area. Area 6 is bordered by: Ault Field Road to the north, State Highway 20 to the east and the Oak Harbor Landfill on the south and southwest boundaries. [Figure 2]
- The following LUCs or restrictions shall be applied within this area.
  - No down-gradient well drilling except for monitoring wells and/or remediation system wells authorized by EPA and Ecology in approved plans
  - Protect existing monitoring wells
  - No use of groundwater from, or down-gradient of, the area except for monitoring and remediation as approved by EPA and Ecology
  - Prevention of any disturbance to the landfill cap, except as necessary for authorized cap maintenance and maintenance activities
  - Ensure that land use at Area 6 remains commercial and/or industrial, which includes a prohibition on development and use of this property for residential housing, elementary and secondary schools, child care facilities and playgrounds

##### **Area 5**

- Area 5 is an area approximately 500 feet long by 500 feet wide located just north of Ault Field Road and west of State Highway 20. [Figure 3]
- The following LUCs or restrictions shall be applied within this area.
  - Ensure that land use at Area 5 remains commercial and/or industrial, which includes a prohibition on development and use of this property for residential housing, elementary and secondary schools, child care facilities and playgrounds
  - Ensure that all disturbed or excavated soils at or from the area are properly categorized and disposed, and that workers are protected during any such disturbance or excavation







## **Attachment B-2**

### **Site-Specific LUC Requirements for OU2**

**OU2 ROD, May 17, 1994**

#### **Areas 2 and 3**

- Area 2 includes 13 acres around a former landfill located southwest of the current fire training school. The area is on a topographic high of 118 feet above mean sea level (msl) and slopes easterly. The western boundary is covered with mixed evergreen vegetation. A gravel road and fence define the southern boundary. A wetland is located near the eastern boundary of the area. [Figure 4]
- Area 3 includes a 1.5-acre parcel located east of Area 2 and southeast of the current fire training school. The area is on a small knoll approximately 94 feet above msl. Several remnant house foundations are present at the south end of the knoll and an evergreen forest is located to the north. The ground slopes to the west and south into the wetland east of Area 2. [Figure 5]
- The following LUCs or restrictions shall be applied within this area.
  - No use of groundwater from, or down-gradient of, the area described above except for monitoring and remediation, except as approved by EPA and Ecology
  - No down-gradient well drilling except for monitoring wells and/or remediation system wells authorized by EPA and Ecology in approved plans
  - Protect existing monitoring wells
  - Use restrictions to prevent ground disturbance via digging and/or construction activities in the area of former construction debris landfill
  - Ensure that land use at Areas 2 and 3 remains commercial and/or industrial, which includes a prohibition on development and use of this property for residential housing, elementary and secondary schools, child care facilities, and playgrounds

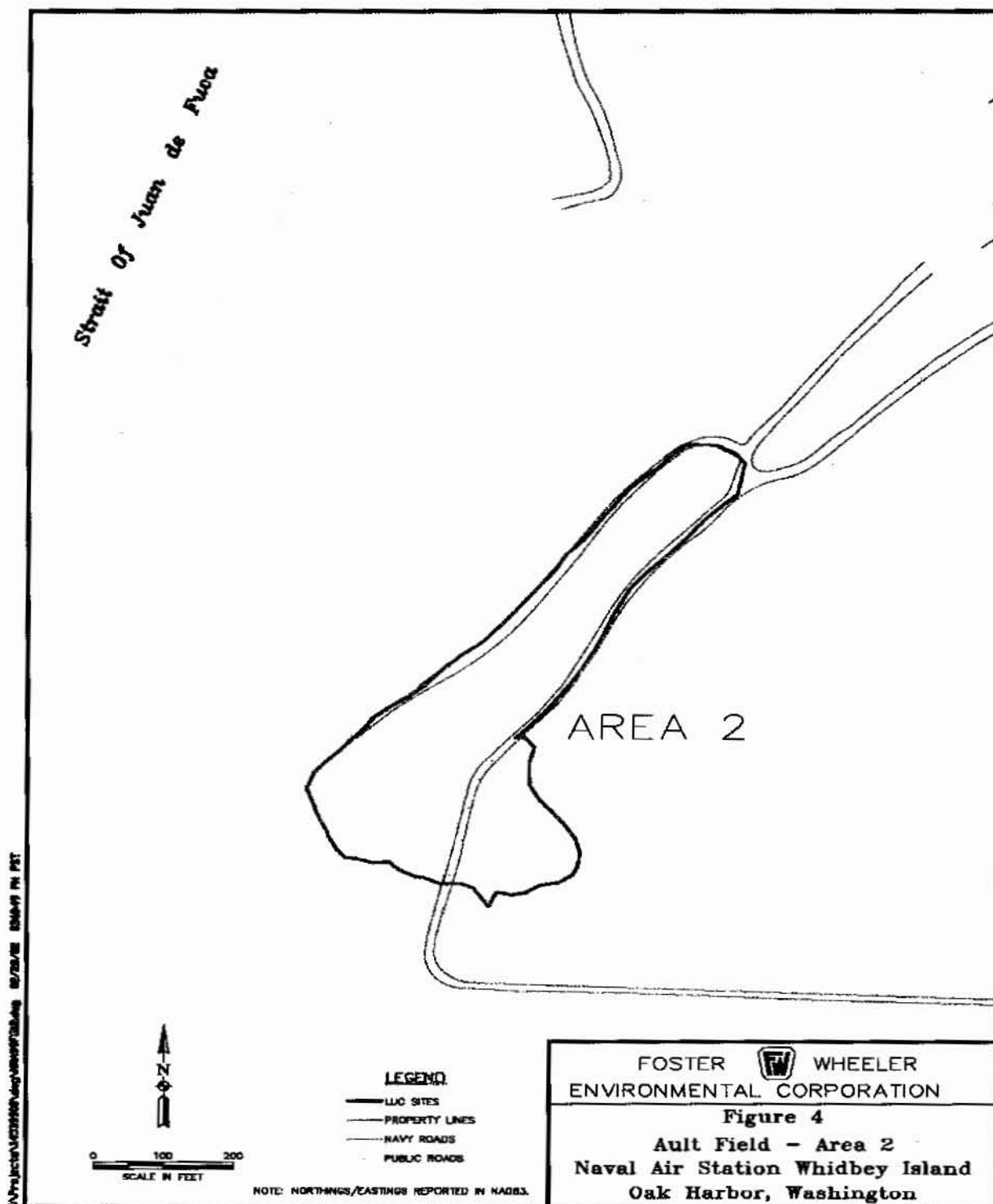
#### **Area 4**

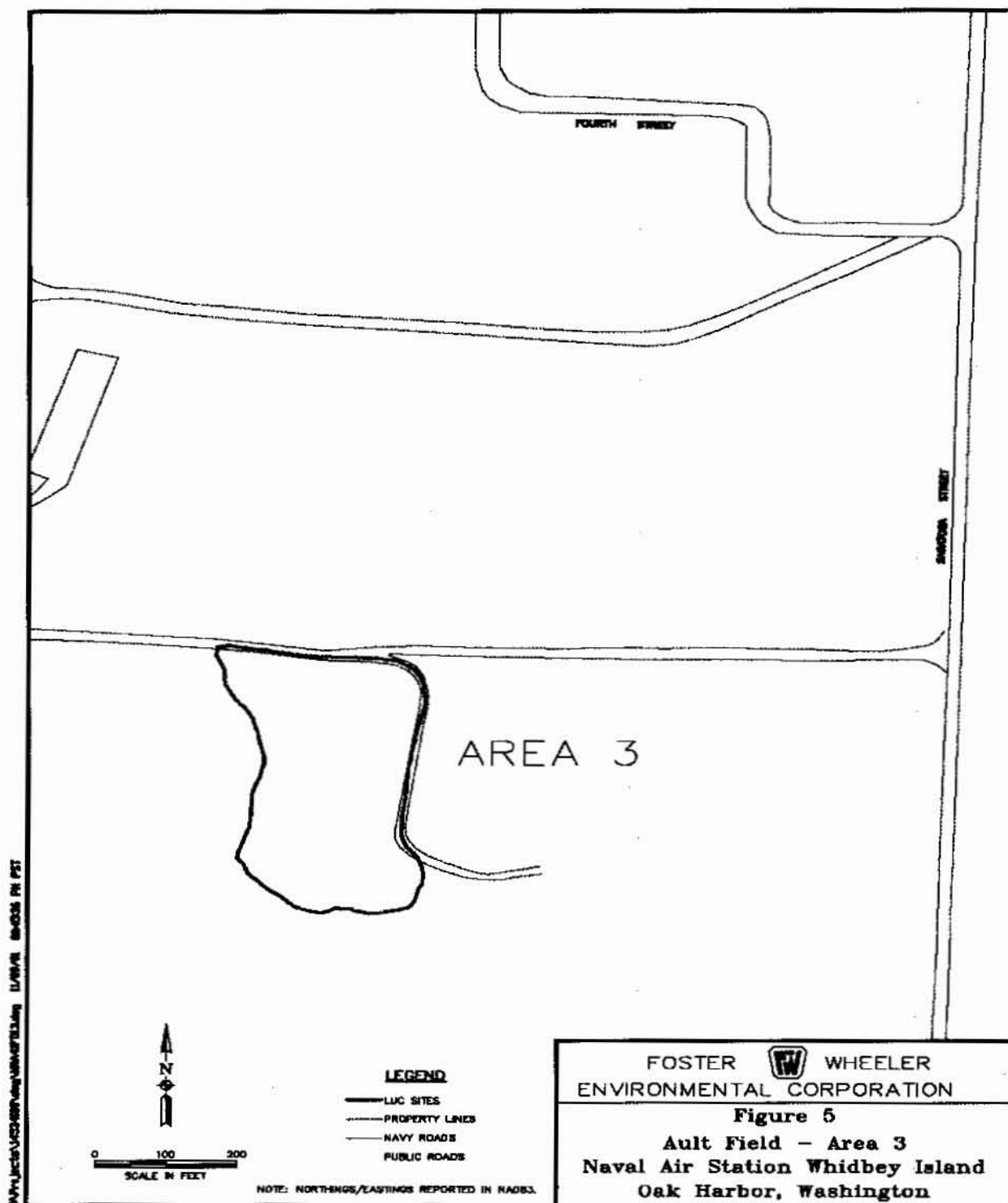
- Area 4 is located approximately 400 yards west of Saratoga Street in the southwest-central part of Ault Field. The fire training school is located to the southwest and Naval Hospital Oak Harbor is approximately 300 yards to the north. [Figure 6]

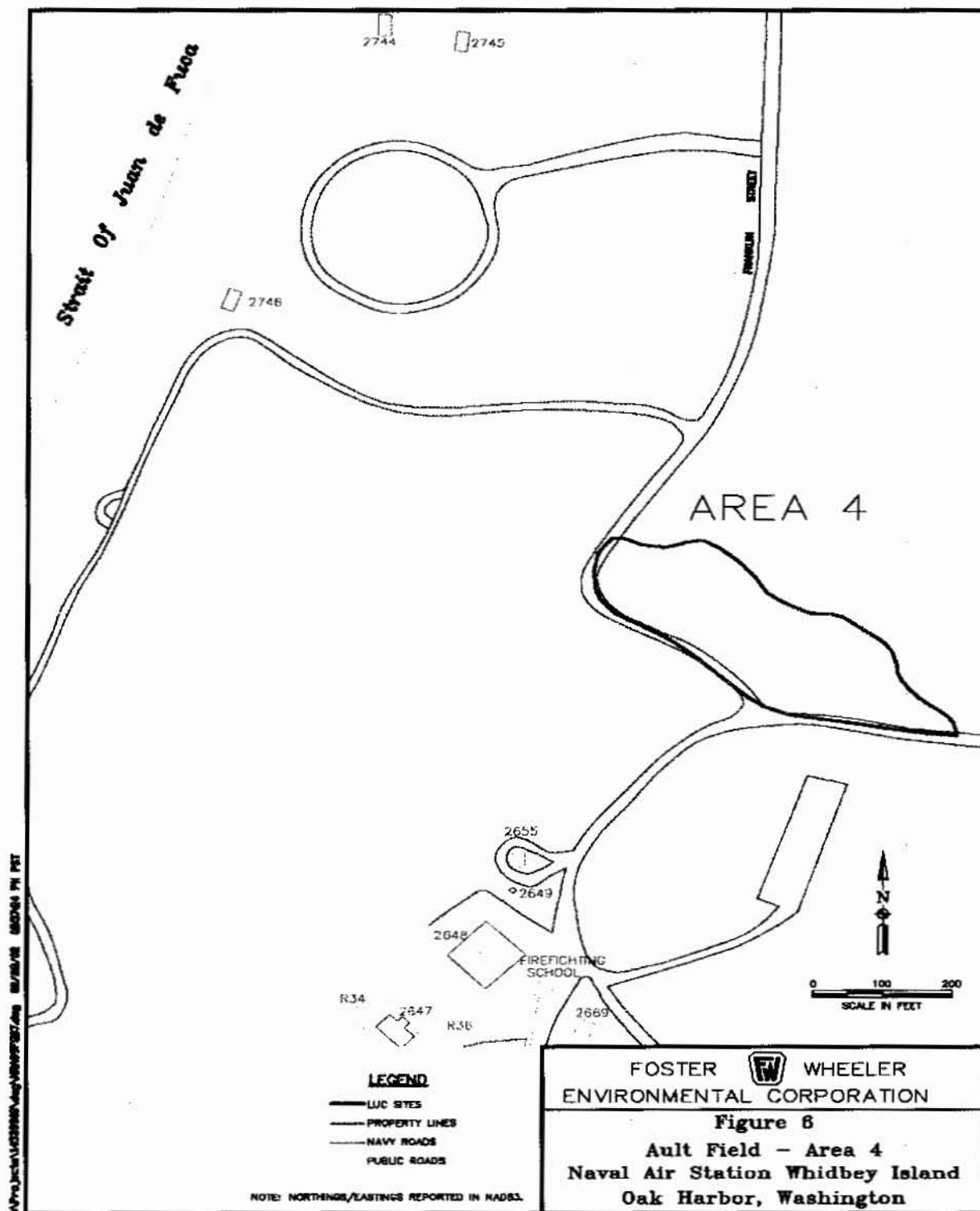
- The following LUCs or restrictions shall be applied within this area.
  - No use of groundwater from, or down-gradient of, the area described above except for monitoring and remediation, except as approved by EPA and Ecology
  - No down-gradient well drilling except for monitoring wells and/or remediation system wells authorized by EPA and Ecology in approved plans
  - Protect existing monitoring wells
  - Ensure that land use at Area 4 remains commercial and/or industrial, which includes a prohibition on development and use of this property for residential housing, elementary and secondary schools, child care facilities, and playgrounds

**Area 29**

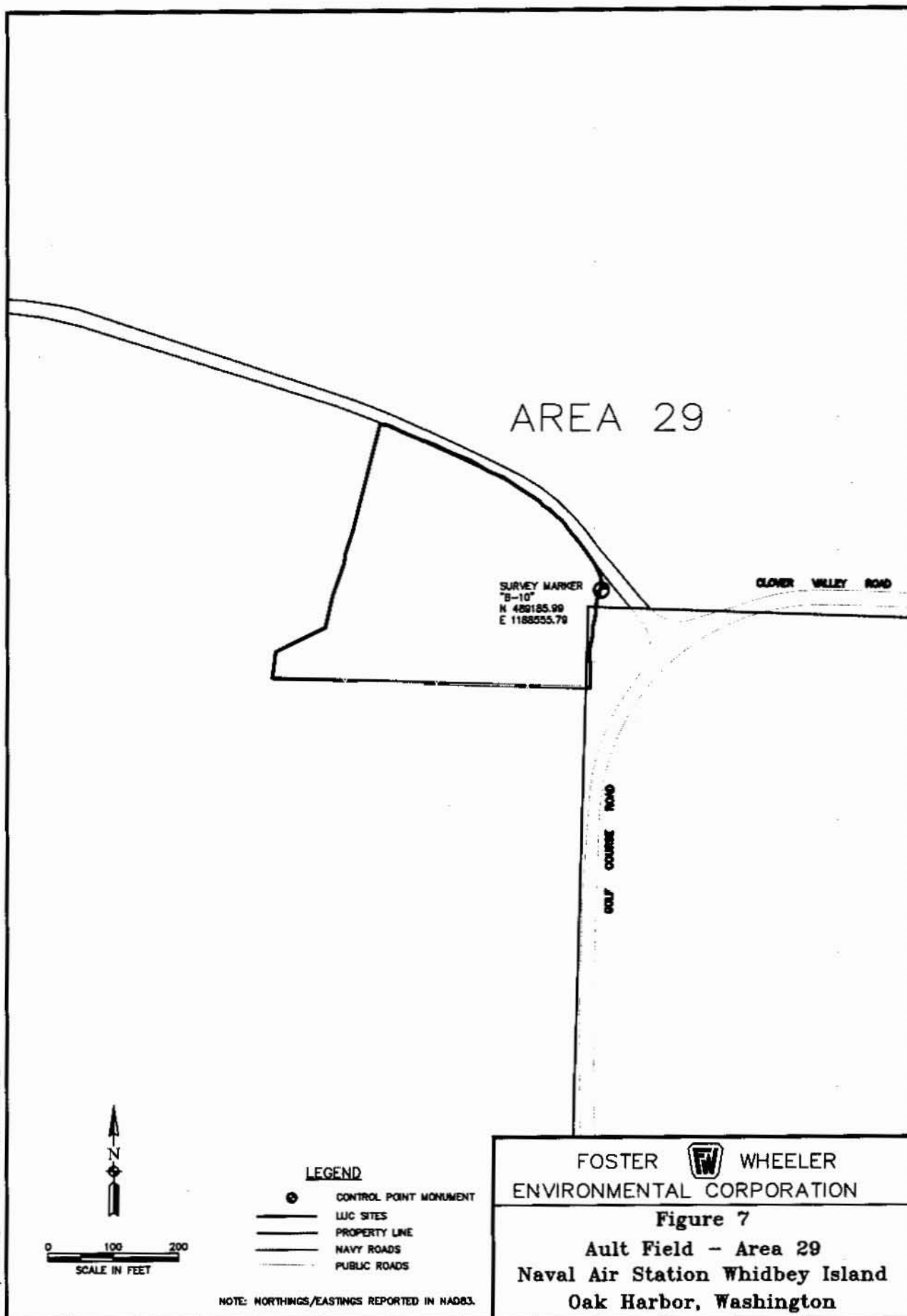
- Area 29 is a 4-acre parcel located west of the intersection of Clover Valley Road and Golf Course Road in the southwestern portion of Ault Field. [Figure 7]
- The following LUCs or restrictions shall be applied within this area.
  - No use of groundwater from, or down-gradient of, the area described above except for monitoring and remediation, except as approved by EPA and Ecology
  - No down-gradient well drilling except for monitoring wells and/or remediation system wells authorized by EPA and Ecology in approved plans
  - Protect existing monitoring wells







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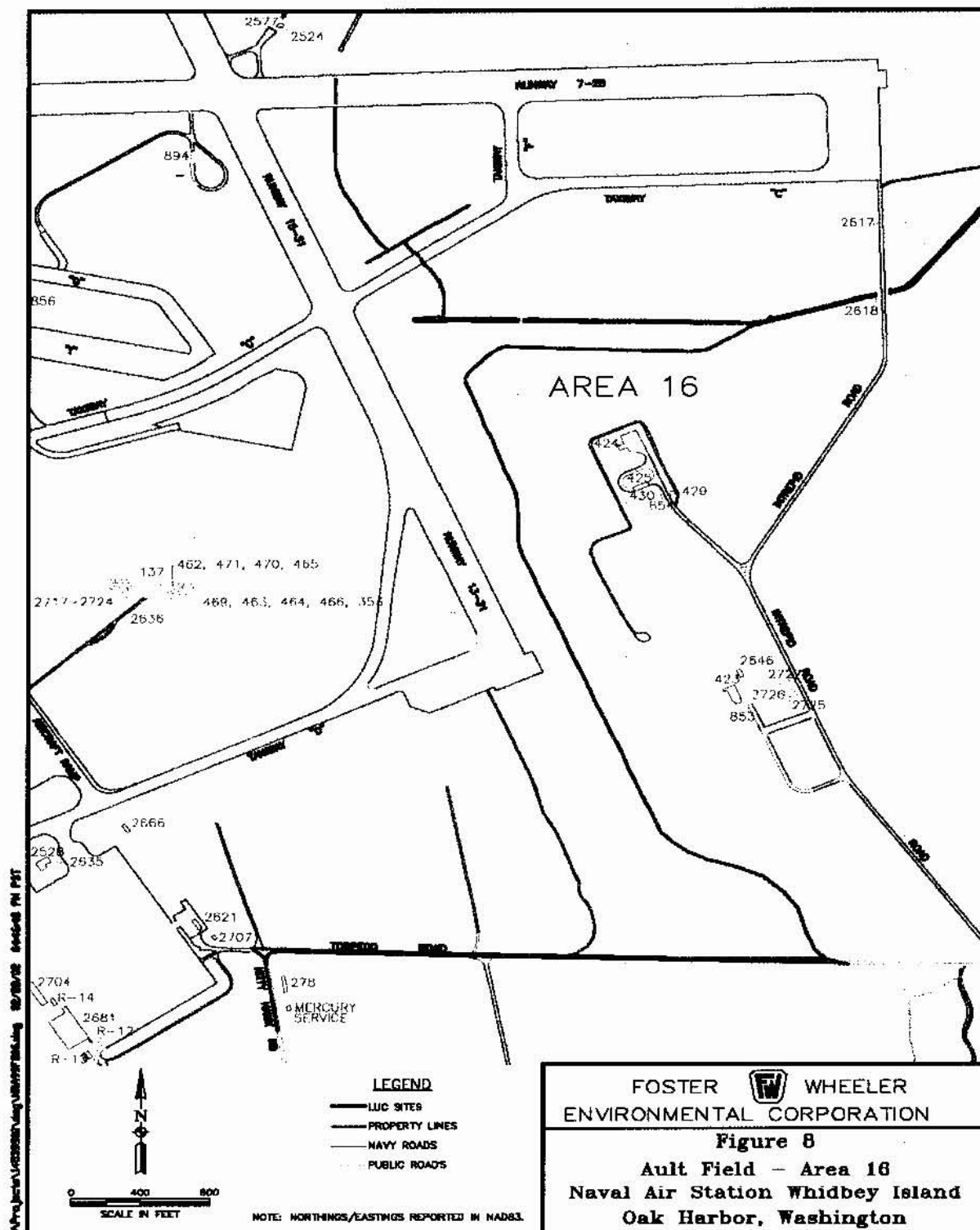
### **Attachment B-3**

#### **Site-Specific LUC Requirements for OU3**

##### **OU3 ROD**

###### **Area 16**

- The runway ditches are a system of open ditches and adjoining properties receiving runoff from the storm sewer and runway complex. Separate LUCs and/or restrictions are required for removal of ditch sediments and disposal on adjoining properties. The removal of contaminated sediments was based upon an ecological risk, while the less stringent disposal criteria on adjoining banks is based upon their use as industrial property. [Figure 8]
- The following LUCs or restrictions shall be applied within 50 feet of the centerline of the ditch:
  - Limit adjoining ditch banks to industrial use; ensure that land use at Area 16 remains commercial and/or industrial, which includes a prohibition on development and use of this property for residential housing, elementary and secondary schools, child care facilities, and playgrounds





## **Attachment B-4**

### **Site-Specific LUC Requirements for OU4**

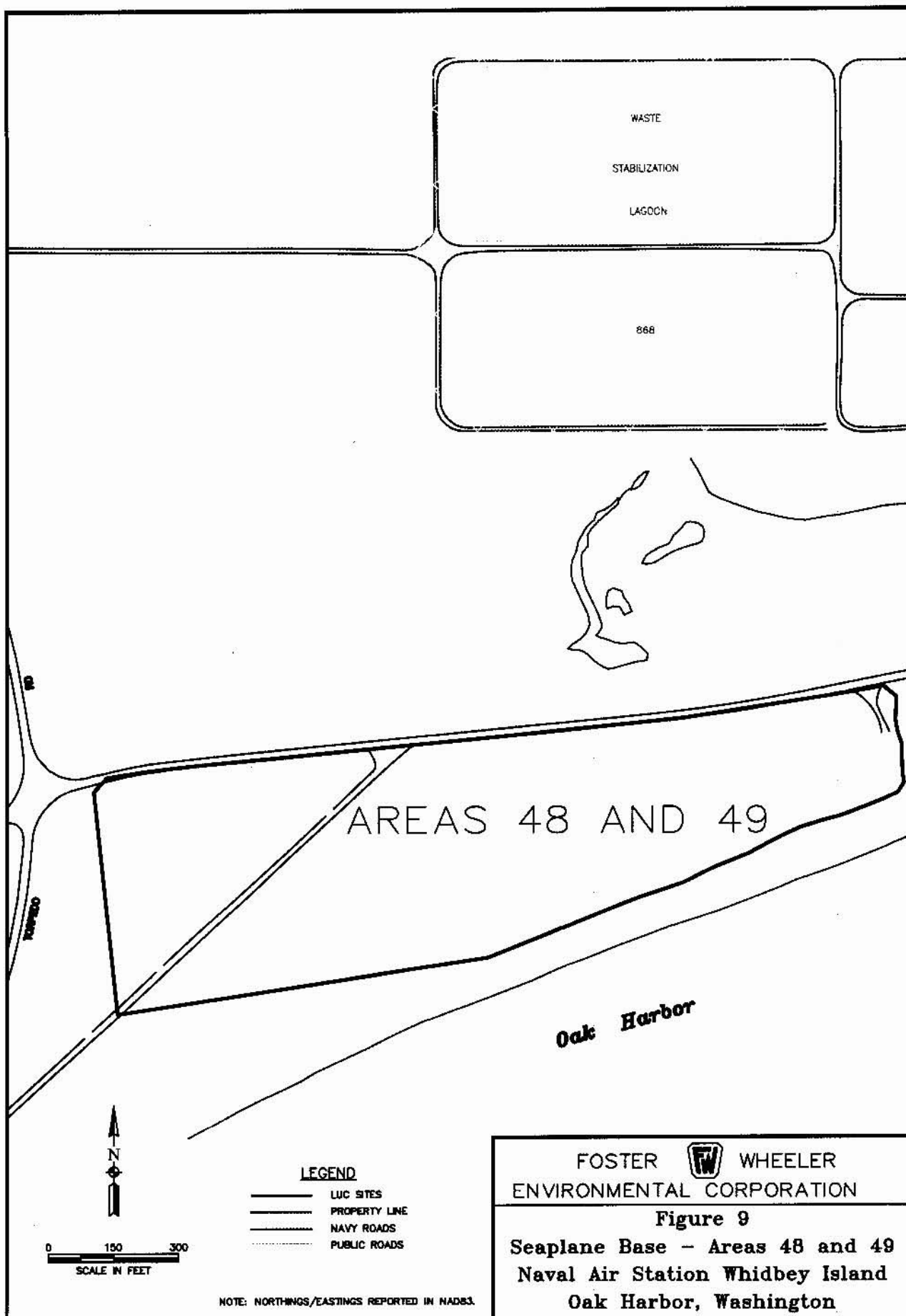
#### **OU4 ROD**

##### **Area 49**

- Area 49 encompasses a 3 to 4-acre landfill located east of Torpedo Road, south of Beach Road, and along Crescent Harbor Bay. [Figure 9]
- The following LUCs or restrictions shall be applied within this area.
  - Use restrictions to prevent ground disturbance via excavation or other ground disturbing activities in the area of former construction debris landfill
  - Limit Area 49 to commercial and/or industrial use; ensure that land use remains commercial and/or industrial, which includes a prohibition on development and use of this property for residential housing, elementary and secondary schools, child care facilities, and playgrounds

**All other areas that encompass OU4 do not require LUCs.**

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## **Attachment B-5**

### **Site-Specific LUC Requirements for OU5**

#### **OU5 ROD, July 10, 1996**

##### **Area 1**

- Area 1 is located west of the intersection of Saratoga and Princeton Streets, between the Nor'wester Club and the Jet Engine Test Cell and along the Strait of Juan de Fuca. [Figure 10]
- The following LUCs or restrictions shall be applied within this area.
  - No use of groundwater from, or down-gradient of, the area described above except for monitoring and remediation, except as approved by EPA and Ecology
  - No down-gradient well drilling except for monitoring wells and/or remediation system wells authorized by EPA and Ecology in approved plans
  - Protect existing monitoring wells
  - Use restrictions to prevent ground disturbance via digging and/or construction activities in the area of former construction debris landfill
  - Limit Area 1 to commercial and/or industrial use; ensure that land use remains commercial and/or industrial, which includes a prohibition on development and use of this property for residential housing, elementary and secondary schools, child care facilities, and playgrounds

##### **Area 52**

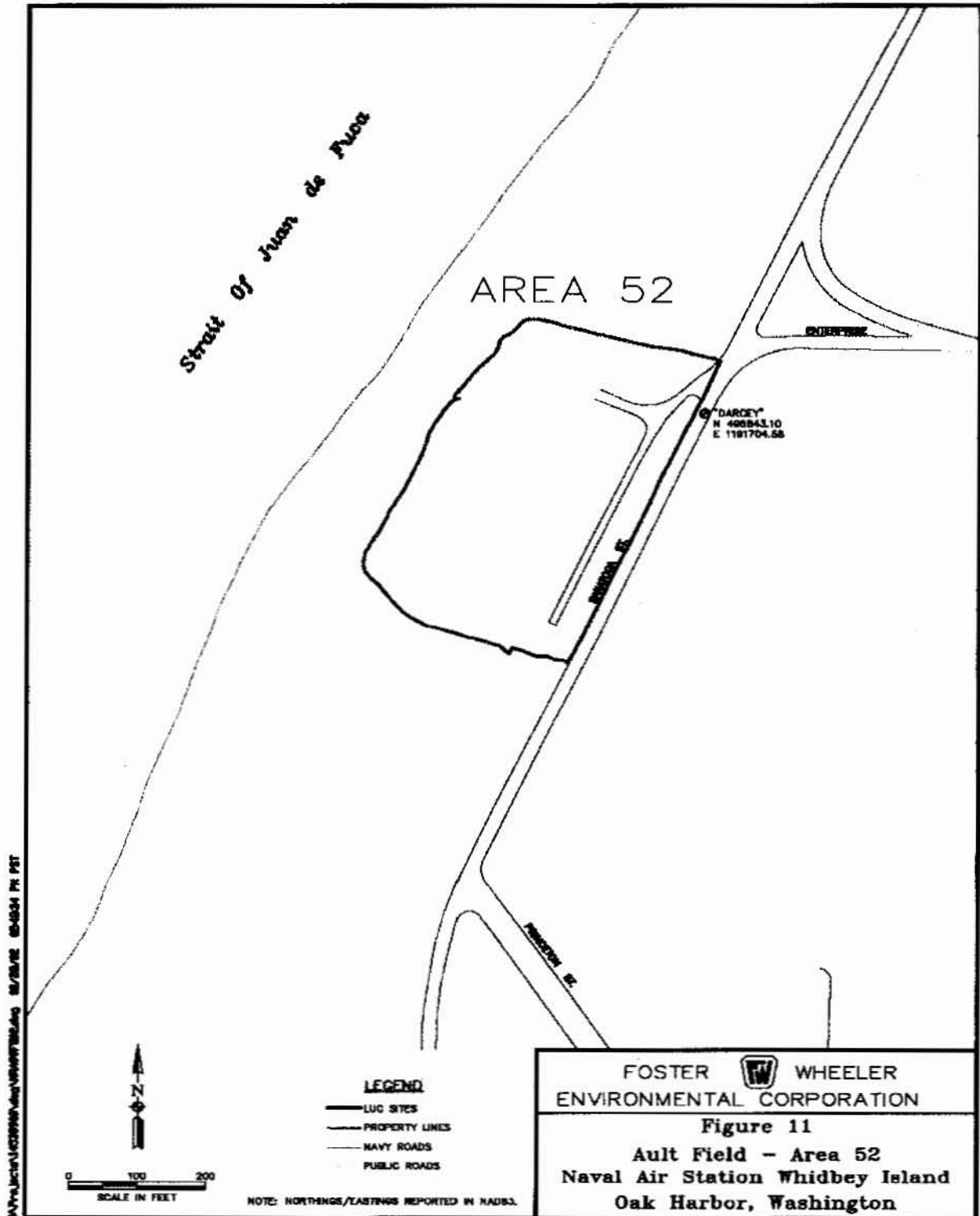
- Area 52 located southwest of the intersection of Saratoga Street and Enterprise Road. [Figure 11]
- The following LUCs or restrictions shall be applied within this area.
  - No use of groundwater from, or down-gradient of, the area described above except for monitoring and remediation, except as approved by EPA and Ecology
  - No down-gradient well drilling except for monitoring wells and/or remediation system wells authorized by EPA and Ecology in approved plans

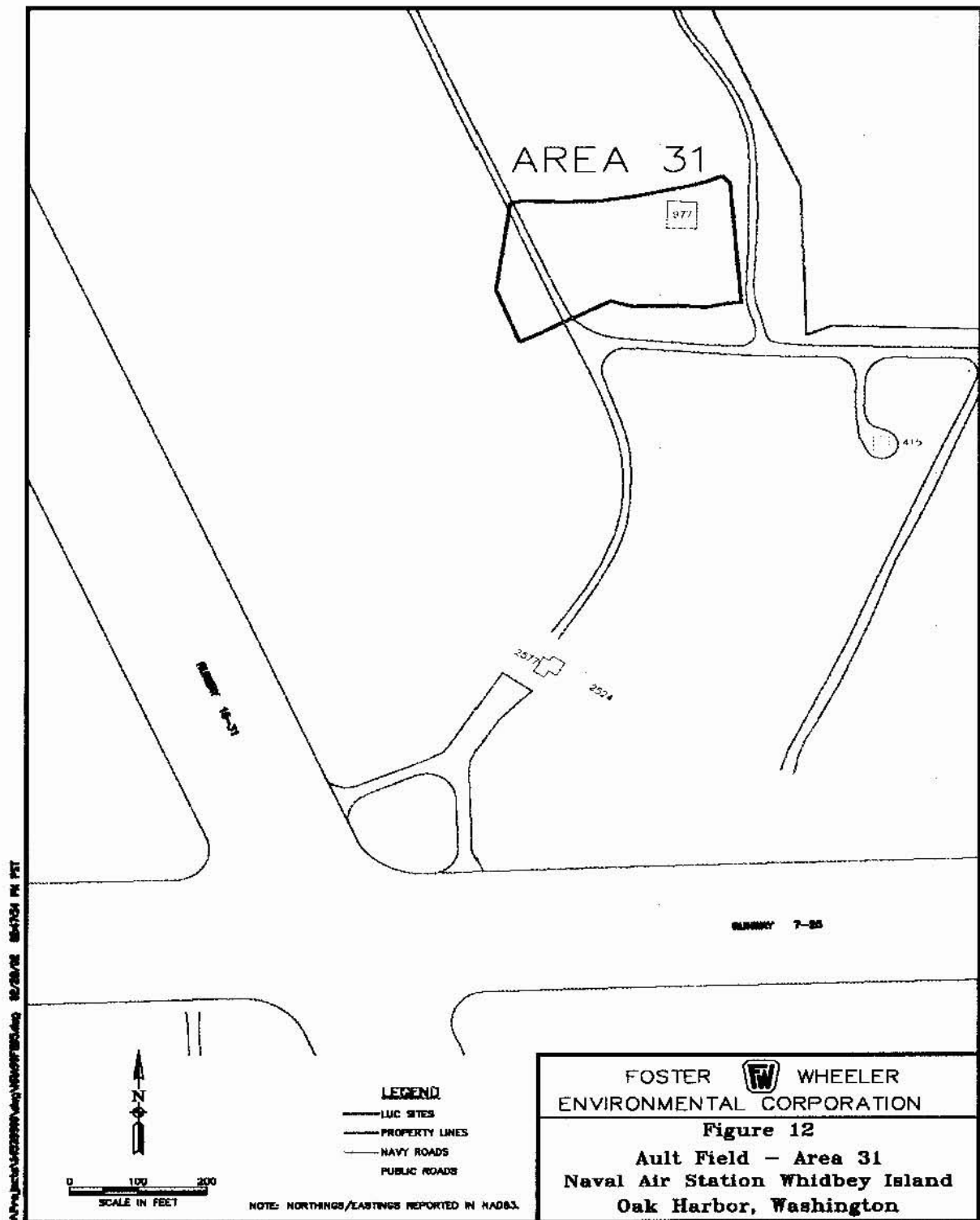
- Protect existing monitoring wells
- Limit Area 52 to commercial and/or industrial use; ensure that land use remains commercial and/or industrial, which includes a prohibition on development and use of this property for residential housing, elementary and secondary schools, child care facilities, and playgrounds

### **Area 31**

- Area 31 is located southwest of the intersections of Degraff and Sullivan Roads (public roads) and approximately 400 yards northeast of the intersection of Runways 13-31 and 7-25. [Figure 12]
- The following LUCs or restrictions shall be applied within this area.
  - No use of groundwater from, or down-gradient of, the area except for monitoring and remediation, as approved by EPA and Ecology.
  - No down-gradient well drilling except for monitoring wells and/or remediation system wells authorized by EPA and Ecology in approved plans
  - Protect existing monitoring wells
  - Limit Area 31 to commercial and/or industrial use; ensure that land use remains commercial and/or industrial, which includes a prohibition on development and use of this property for residential housing, elementary and secondary schools, child care facilities, and playgrounds







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